

**747**

**Aircraft Environment Research**

**Facility**

**747AERF**



# 747AERF

- Historical information
- Modifications
- Capabilities
- Completed and current projects
- Planned simulation special effects



**Artist's Concept 1998**



**747AERF AS IT APPEARS TODAY**

# 747AERF



- Manufactured Oct 29, 1973

# 747AERF



- Manufactured  
Oct 29, 1973
- Operated by  
PAN AM

# 747AERF



- Manufactured Oct 29, 1973
- Operated by PAN AM
- Aircraft purchased in 1997 by the FAA

# 747AERF



- Removed Flight Hardware

# 747AERF



- Removed flight hardware
- Permanently mounted airframe

# 747AERF



- Removed flight hardware
- Permanently mounted airframe
- Installed generator power

# 747AERF

- Installed exhaust ventilators to remove smoke from interior



# 747AERF

- Installed air handling equipment to produce normal aircraft airflow patterns



# 747AERF



- Installed bulkheads
- Creates five discrete zones
- Each zone can operate independently

# 747AERF

## Master Control Center



- Installed control consoles
- Operate and monitor all systems from one location



# 747AERF

## Galleys and Lavatories



- Fabricated and installed galley and lavatory monuments



# 747AERF Capabilities

- Configured to simulate multiple wide-body aircraft
- Floor strengthened to support multiple high energy activities for many years





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# 747AERF Capabilities

- Operate at the normal sill height of 16 feet
- Smoke system is capable of providing a completely smoke filled environment in 30-45 seconds and clearing the smoke in 60-70 seconds
- Smoke system is zone controlled



Full scale 16 foot sill height



# Completed and Current Projects

- Boeing/ USAF, Electromagnetism study
- FAA, Runway visual ranging study
- FAA security, cabin air quality research
- NASA/ Airlines, Turbulence detection and clear cabin secure study

# Completed and Current Projects

- Transportation safety institute, transport category aircraft cabin, accident investigators training classroom
- Airport fire-rescue training area
- Airport triennial emergency response exercise, OKC Mar 2002

# Planned Simulation Special Effects

- Simulated interior and exterior non-heat fire
- Electrical arcing simulation
- Simulated “Boom” sound
- All aircraft communication tones and sounds
- Airframe vibration maker
- Removable upper deck stairwell

# Potential 747AERF Projects

- Evacuation studies (single or multiple doors)
- Escape slide studies
- Cabin procedures studies
- Cabin lighting research
- Studies into stairwell issues
- Digital human modeling research

# Non-research activities

- Fire department training with actual size aircraft
- Law enforcement training
  1. Local
  2. State
  3. Federal

